Reef Restoration Planned for *MV Wellwood*

In the heat of the summer of 2001, Florida Keys National Marine Sanctuary "Reef Doctor" Harold Hudson and his team of assistants began constructing the concrete and limestone rock modules that will be used in restoring part of Molasses Reef damaged by a freighter in 1984. Hudson designed the restoration modules to be placed in such a way as to rebuild the older spur and groove formation of the original coral reef and provide maximum habitat for fish, corals, and the many marine organisms that live within or attached to the reef.

Each dome-shaped module is roughly 5 feet in diameter and 3 feet in height, and consists of limestone rocks embedded in an irregular base. The rocks are hand-selected by Hudson himself from a quarry in Dade County. The modules contain numerous crevices, holes, and a central "cave" inside, making them similar to the natural reef in that they offer shelter for spiny lobsters, fish, and other marine life.

Each of the 22 reef restoration modules is made of limestone rock and concrete and contains many crevices and a central "cave" to serve as shelter for marine life.

The *M/V Wellwood*, a 122-meter freighter registered in Cyprus, ran aground in approximately 22 feet of water on Molasses Reef in the Key Largo National Marine Sanctuary on August 4, 1984, and remained there for 12 days. The grounding destroyed over 1,000 square meters of living coral, causing widespread destruction of bottom-dwelling organisms and displacing fish and other marine life. The ship's collision with the reef not only destroyed living coral, it severely damaged the reef framework, making it more susceptible to erosion and damage from winter storms and hurricanes. In 1998, Hurricane Georges excavated 14 craters within the main injury site. The largest was 30 feet long, 15 feet wide, and 3 feet deep. The modules will be placed in these craters and a special underwater concrete will be pumped around each unit to anchor it to the reef. When completed, the repair will prevent further erosion of the site.

In December of 1986, the Wellwood Shipping Company and the Hanseatic Shipping Company settled with the federal government for $6.275 million to be paid over 15 years. The amount includes a civil penalty, as well as response, assessment and restoration costs. Initial payments were used to reimburse the extensive emergency response costs of NOAA and the U.S. Coast Guard. Shortly after the grounding incident, Sanctuary staff transplanted corals into the injury site and initiated a scientific monitoring program. By December 2001, when the final payment was made, sufficient restoration funds had accrued in the account, making comprehensive physical and biological restoration possible for the Wellwood site.

Restoration Biologist Harold Hudson is shown righting a coral head turned over during a boat grounding incident on the reef. Over the past 10 years, the Sanctuary's damage assessment team has undertaken restoration projects at grounding sites throughout the Sanctuary and recently consulted with salvors and park personnel regarding several boat groundings in Dry Tortugas National Park.

The FKNMS recently held a public meeting in Key Largo to detail plans for the restoration, which is scheduled to begin in mid May and last about a month. Sanctuary staff will work with the contractor to place the modules at 14 locations on the grounding site. Several mooring buoys nearby will be temporarily removed, but replaced after the process is complete. Residents and visitors will be asked to avoid the construction zone for their own safety. Physical restoration using Hudson's modules is only the first step in the process, additional biological restoration is also planned.

Note: This article appeared in the Spring 2002 issue of the newsletter of the Florida Keys National Marine Sanctuary, **Sounding Line.** *For more information, visit:* floridakeys.noaa.gov.